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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
GREENE, JASON M	
ART UNIT	PAPER NUMBER
1724	

DATE MAILED: 12/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS

Office Action Summary	Application No.	Applicant(s)	
	09/871,582	BARRIS ET AL.	
	Examiner	Art Unit	
	Jason M. Greene	1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 September 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-138 and 140-149* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *53-138 and 140-149* is/are allowed.

6)☒ Claim(s) *1-8,20,37 and 48-52* is/are rejected.

7)☒ Claim(s) *9-19,21-36 and 38-47* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 May 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

Response to Arguments

1. Applicant's arguments filed 12 September 2003 have been fully considered but they are not persuasive.

With regard to Applicants' arguments concerning the use of the invention prior to the critical date, the Examiner does not agree that the use was experimental and not a public use and sale of the invention.

The on sale bar applies when the two conditions set forth in the *Pfaff* decision are satisfied prior to the critical date. First, the invention must be the subject of a commercial offer for sale and, secondly, the invention must be ready for patenting. With regard to the first condition, Applicants argue that the sale noted in the prior action was entirely experimental and, therefore, not commercial in nature. With regard to the second condition, Applicants argue that the invention was not ready for patenting because the invention required extensive testing to determine that the filters could be used for their intended purpose.

Since the nature of the sale is also relevant to the disputed public use of the invention, the Examiner will first address Applicants' arguments regarding the second *Pfaff* test. For brevity, the first Pfaff test will be addressed along with Applicants' public use arguments below.

As noted above, the second Pfaff test requires the invention to be ready for patenting. The ready for patenting condition can be satisfied by proof of reduction to practice before the critical date or by proof that prior to the critical date the inventor had prepared drawings or other descriptions of the invention that were sufficiently specific to enable a person skilled in the art to practice the invention. See *Pfaff* at 1647. In this case, proof of reduction to practice is demonstrated by the fact that the new filters including the new fine fiber polymer were manufactured and shipped to customers in the spring of 1999. As noted by Applicants, the new filters were shipped to customers in lieu of the filters that were usually shipped in order to avoid alerting customers that the new filters were in any way different. Therefore, there is evidence Applicants and Assignee believed the invention to be "completed" at the time of the shipment. In the pre-existing relationship, Assignee shipped filters to customers operating power generation turbines in response to either written or oral purchase orders. Since the new filters were used to fill the purchase orders without alerting the customers of the changes, Assignee must have expected the new filters to be "completed" and suitable for their intended use. Filling purchase orders submitted in accordance with a pre-existing business relationship with new filters without alerting customers that the filters were somehow

different provides evidence that Assignee either knew or sincerely believed that the new filters were "completed" and suitable for their intended use.

In the *EZ Dock, Inc.* case, the inventors alerted the customer that the invention was experimental and the customer agreed to allow the inventors to inspect and repair the dock as needed. This arrangement demonstrates that the inventors did not believe their invention to be "complete" and ready for patenting. Additionally, as noted at page 1291 of the *EZ Dock, Inc.* case, the sale resulted in a design change of a portion of the dock. However, in the instant case, no notice was provided to the customers that the filters were experimental and no agreement was reached to allow Assignee to inspect the filters. Furthermore, the sales did not result in any design improvements to the filters.

Applicants further argue that the use was experimental and that first prong of the Pfaff test is not satisfied because the transaction was entirely experimental. However, the Examiner does not agree.

Applicants argue that the invention was never detectable to workers at the power stations and was never exposed to the public because of the nature of the fine fibers forming the inventive portion of the filter. However, anyone present at the power stations could have, for whatever reason, subjected the filters to instrumental analysis and freely disclosed the results publicly given the lack of confidentiality agreements.

With regard to Applicants' arguments that the tests were conducted in the only manner possible under the circumstances, the Examiner contends that the lack of control and recorded results indicates that the use was not experimental in nature. MPEP 2133.03(e)(5) states "A significant determinative factor in questions of experimental purpose is the extent of supervision and control maintained by an inventor over an invention during an alleged period of experimentation". Applicants contend that the customers were selected because they were known to monitor filter performance on a minute-by-minute basis and would have immediately informed assignee if the filters did not perform as desired. Applicants continue by stating that assignee could not have obtained better control of the experimental conditions if it had controlled the facility itself. However, the Examiner does not agree. Applicants mention that the customers monitored such variables as pressure drop, reduced airflow or efficiency, and difficulty in pulse cleaning. However, Applicants fail to mention what ranges were considered acceptable by the customers, how poorly the filters would have had to performed before the customers notified assignee, or how the new filters compared in relation to the old filters. There is absolutely no evidence that assignee received any operating data or feedback from the customers regarding the operation of the filters. While Applicants' Exhibits 1-9 and the Supplemental Crofoot Declaration at page 13 state that preparations were made for handling any returned filters, there is no mention of how many filters were actually returned, why they were returned, how they were analyzed, or how the information obtained therefrom was used to make improvements. The lack of control and recorded results indicates that the use was routine commercialization.

In the EZ Dock case, the inventors visited the dock several times to investigate whether or not the dock was performing as desired and even made repairs during the course of the experiment. However, in the instant case, there is no evidence that assignee took any steps to follow up on the performance of the new filters.

With regard to Applicants argument that assignee did not charge customers for the experimental fine fiber material, the Examiner notes that in the *Monon* case upon which Applicants rely, the trailer was returned by the customer for a full credit of the purchase price after a 1-year trial to allow the manufacturer an opportunity to inspect the trailer to determine whether or not it performed as intended. Since the filters were not returned for a refund after the experimentation period, the *Monon* case is irrelevant.

With regard to Applicants argument that the test conditions were varied, the Examiner agrees that the some of the locations were in hot and humid environments. However, the selection of varied testing conditions is not in accordance with the problem in the prior art Applicants wished to address. Specifically, as mentioned by Declarant Crofoot, the problem in the prior art was that the fine fiber material deteriorated under combined conditions of high temperature and high humidity. Therefore, since the customary fine fiber materials were known to perform adequately in other conditions, the new fine fiber material would have also been expected to perform adequately and experimentation in those environments would have not been necessary.

Furthermore, MPEP 2133.03(e)(3) states "Experimental use "means perfecting or completing an invention to the point of determining that it will work for its intended purpose." Therefore, experimental use "ends with an actual reduction to practice." RCA Corp. v. Data Gen. Corp., 887 F.2d 1056, 1061, 12 USPQ2d 1449, 1453 (Fed. Cir. 1989). As noted above, assignee had an ongoing business relationship with the customers who received the new filters in the 1999 shipments. As part of the ongoing relationship, assignee agreed to supply the customers with filters that were suitable for use in power generation turbines. Therefore, the customers had an expectation that the filters received from assignee would be suitable for use in their intended environment. Since assignee shipped the new filters to the customers without any notice that the filters were in any way different from the filters that were usually shipped, assignee must have recognized that the filters were indeed "complete", reduced to practice, ready for patenting, and suitable for their intended use.

With regard to Applicants' arguments regarding the Kahlbaugh et al. and Emig et al. references, the Examiner notes that the references are cited to show that it was known to from fine fibers from the polymers disclosed in the references. Therefore, even though the structures disclosed in the secondary references are different than the structure of the filters involved in the prior use and sale of the invention, one of ordinary skill in the art would have recognized that the fine fibers could have been formed from the polymers disclosed in the Kahlbaugh et al. and Emig et al. references.

With regard to Applicant's argument that the Engel et al. reference is directed to a filter for a large internal combustion engine, the Examiner contends that such a structure is within the scope of the language of the rejected claims. Claim 1, from which claims 48-52 depend is limited only to a filter element. There is no recitation in the rejected claims that differentiate the claimed structure from the structure disclosed by Engel et al.

Applicant's arguments, see page 34, lines 17-25, filed 12 September 2003, with respect to claims 1, 53, 81, 111, 128, 132, and 146 have been fully considered and are persuasive. The rejection under 35 U.S.C. 112, second paragraph of claims 1, 53, 81, 111, 128, 132, and 146 has been withdrawn.

With regard to claim 1, the Examiner agrees with Applicants' statement that the filter pack is not limited to a circular or substantially circular shape.

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 2, 20, and 48 are rejected under 35 U.S.C. 102(b) based upon a public use or sale of the invention.

With regard to claim 1, the P19-1280 and P19-1281 filters, as in public use and offered for sell prior to the critical date of 05 September 1999, comprise a filter element comprising a media pack comprising a construction of a media composite (1), said construction including a substrate having a plurality of pleats having a length extending from said first end to said second end, the substrate comprising a filter medium having a high efficiency when tested with particles having a diameter of 0.01 to 1 μm, said construction having a tubular shape and defining an open interior having a first and a second opposite ends, said substrate at least partially covered by a single layer, said layer comprising a polymeric fine fiber comprising a fiber with a diameter of about 0.01 to 0.5 microns, a first end cap and a second end cap, said media pack being secured to said first end cap at said first end of said media pack, said media pack being secured to said second end cap at said second end of said media pack, at least one of said first and second end caps including a sealing portion, said sealing portion comprising a material compressible in a direction toward said media pack. See Crofoot Declaration at paragraphs 4, 5, 12, and 13.

While the fine fiber layers of the P19-1280 and P19-1281 filters are not explicitly disclosed as retaining greater than 30 percent of the fiber unchanged for filtration purposes after test exposure for a test period of 16 hours to test conditions of 140 ^{0}F and a relative humidity of 100 percent, the fine fiber material would have inherently possessed these heat and humidity resistance properties. As disclosed in the Supplemental Crofoot Declaration at paragraph 4, the fibers used to form the fine fiber

layers were developed to solve the problem of deterioration of the prior art fine fiber layer under the conditions of high heat and high humidity. Since the fibers used to form the fine fiber layer were explicitly developed to provide heat and humidity resistance, they would have inherently retained greater than 30 percent of the fiber unchanged for filtration purposes after test exposure for a test period of 16 hours to test conditions of 140 ^{0}F and a relative humidity of 100 percent.

With regard to claim 2, the P19-1280 and P19-1281 filters comprise a polymeric fine fiber layer wherein the polymer comprises the condensation polymers nylon 6, nylon 66, and nylon 6.10. See Crofoot Declaration at paragraphs 5 and 13.

With regard to claim 20, the P19-1280 and P19-1281 filters comprise a polymeric fine fiber layer wherein the polymer comprises a nylon polymer comprising a homopolymer having repeating units derived from a cyclic lactam (nylon 6). See Crofoot Declaration at paragraphs 5 and 13.

With regard to claim 48, the sealing portion of the P19-1280 and P19-1281 is an axially directed seal. See Crofoot Declaration at paragraphs 4 and 12.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the public use and sale of the invention in view of Kahlbaugh et al. '399.

With regard to claims 3-7, the fine fibers of the P19-1280 and P19-1281 filters do not comprise addition polymers.

Kahlbaugh et al. discloses a similar filter having polymeric fine fiber layers, the fine fiber comprising the addition polymers polyvinyl chloride, polyvinylidene fluoride, and polyvinylidene chloride in col. 16, lines 53-64.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the fine fibers of the P19-1280 and P19-1281 filters using the addition polymers of Kahlbaugh et al. '399 in that such are merely an alternate materials in the art for forming a layer of fine fibers, mere substitution of one known fine fiber forming material for another in the art without a showing of unobvious or unexpected results being within the scope of one having ordinary skill in the art.

6. Claims 8 and 37 and rejected under 35 U.S.C. 103(a) as being unpatentable over the public use and sale of the invention in view of Emig et al.

With regard to claim 8, the fine fibers of the P19-1280 and P19-1281 filters do not comprise polyvinyl alcohol.

Emig et al. discloses a similar filter media having a layer of fine fiber supported on a substrate wherein the fine fiber comprises polyvinyl alcohol in col. 2, lines 26-53.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the fine fibers of the P19-1280 and P19-1281 filters using the polyvinyl alcohol or copolymer of vinyl alcohol of Emig et al. in that such are merely alternate materials in the art for forming a layer of fine fibers, mere substitution of one known fine fiber forming material for another in the art without a showing of unobvious or unexpected results being within the scope of one having ordinary skill in the art.

With regard to claim 37, the fine fibers of the P19-1280 and P19-1281 filters do not comprise a blend of a polyurethane polymer and a polyamide polymer.

Emig et al. discloses a similar filter media having a layer of fine fiber supported on a substrate wherein the fine fiber comprises a blend of a polyurethane polymer and a polyamide polymer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the fine fibers of the P19-1280 and P19-1281 filters using the blend of polyurethane and polyamide of Emig et al. in that such are alternate polymers in the art for forming fine fibers, mere substitution of one known fine fiber forming polymer for another in the art being within the scope of one having ordinary skill in the art.

7. Claims 48-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engel '992 in view of the public use and sale of the invention.

With regard to claim 48, Engel '992 discloses a filter element (21) comprising a media pack (25) comprising a construction of a media composite, said construction including a substrate (30) having a plurality of pleats having a length extending from said first end to said second end, the substrate comprising a filter medium having a high efficiency when tested with particles having a diameter of 0.01 to 1 μm, said construction having a tubular shape and defining an open interior having a first and a second opposite ends, a first end cap (23) and a second end cap (24), said media pack being secured to said first end cap at said first end of said media pack, said media pack being secured to said second end cap at said second end of said media pack, at least one of said first and second end caps including a sealing portion (40), said sealing portion comprising a material compressible in a direction toward said media pack, wherein the seal is an axially directed seal in Figs. 1-4 and col.3, line 7 to col. 5, line 60.

Engel '992 does not disclose the substrate being at least partially covered by a layer, said layer comprising a polymeric fine fiber comprising a fiber with a diameter of about 0.01 to 0.5 microns such that after test exposure for a test period of 16 hours to test conditions of 140 ^{0}F air and a relative humidity of 100% retains greater than 30% of the fiber unchanged for filtration purposes.

The P19-1280 and P19-1281 filters, as in public use and offered for sell prior to the critical date of 05 September 1999, comprise a filter element comprising a media pack comprising a construction of a media composite (1), said construction including a substrate having a plurality of pleats having a length extending from said first end to said second end, the substrate comprising a filter medium having a high efficiency when tested with particles having a diameter of 0.01 to 1 μm, said construction having a tubular shape and defining an open interior having a first and a second opposite ends, said substrate at least partially covered by a single layer, said layer comprising a polymeric fine fiber comprising a fiber with a diameter of about 0.01 to 0.5 microns, a first end cap and a second end cap, said media pack being secured to said first end cap at said first end of said media pack, said media pack being secured to said second end cap at said second end of said media pack, at least one of said first and second end caps including a sealing portion, said sealing portion comprising a material compressible in a direction toward said media pack. See Crofoot Declaration at paragraphs 4, 5, 12, and 13.

While the fine fiber layers of the P19-1280 and P19-1281 filters are not explicitly disclosed as retaining greater than 30 percent of the fiber unchanged for filtration purposes after test exposure for a test period of 16 hours to test conditions of 140 ^{0}F and a relative humidity of 100 percent, the fine fiber material would have inherently possessed these heat and humidity resistance properties. As disclosed in the Supplemental Crofoot Declaration at paragraph 4, the fibers used to form the fine fiber layers were developed to solve the problem of deterioration of the prior art fine fiber

layer under the conditions of high heat and high humidity. Since the fibers used to form the fine fiber layer were explicitly developed to provide heat and humidity resistance, they would have inherently retained greater than 30 percent of the fiber unchanged for filtration purposes after test exposure for a test period of 16 hours to test conditions of 140 ^{0}F and a relative humidity of 100 percent.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the filter media of the P19-1280 and P19-1281 filters into the filter element of Engel '992 to provide a filter element having a fine fiber filter media capable of being used in harsh environments.

With regard to claim 49, Engel '992 discloses the seal being a radially directed seal (40) in Fig. 4 and col. 5, lines 30-60.

With regard to claim 50, Engel '992 discloses the filter element further including an inner support liner (26) extending between the first and second end caps, said inner support liner being between said sealing portion and said media pack in Fig. 4 and col. 5, lines 19-23.

With regard to claims 51, Engel '992 discloses the second end cap (24) including an outer radial surface (75), said sealing portion comprising said outer radial surface in Fig. 5 and col. 6, line 60 to col. 7, line 15.

With regard to claim 52, Engel '992 discloses the filter element further including an inner support liner (26) extending between the first and second end caps and an outer support liner (27) extending between the first and second end caps in Fig. 4 and col. 5, lines 19-23.

Engel '992 does not disclose each of said plurality of pleats having a pleat length of at least 6 inches and a pleat depth of at least 1 inch.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the pleat length to be at least 6 inches and the pleat depth to be at least 1 inch to provide a filter element having a specific pleat arrangement for an intended application.

8. Claims 49-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over the public use and sale of the invention in view of Engel '992.

The P19-1280 and P19-1281 filters comprise an inner support liner extending between the first and second end caps and an outer support liner extending between the first and second end caps. See Crofoot Declaration at paragraphs 4 and 12.

The P19-1280 and P19-1281 filters do not have a radially directed seal, the inner support liner is not between said sealing portion and said media pack, and each of said plurality of pleats does not have a pleat length of at least 6 inches and a pleat depth of at least 1 inch.

Engel '992 discloses a similar filter element wherein the filters have a radially directed seal (40,75), the inner support liner is between said sealing portion and said media pack in Figs. 4 and 5, col. 5, lines 19-60, and col. 6, line 60 to col. 7, line 15.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the end cap arrangements of Engel '992 for the end cap arrangements of P19-1280 and P19-1281 filters in that such are alternate end caps in the art for supporting and sealing a filter media within a filter housing, mere substitution of one known end cap arrangement for another in the art being within the scope of one having ordinary skill in the art.

Allowable Subject Matter

9. Claims 53-138 and 140-149 are allowed.

10. Claims 9-19, 21-36, and 38-47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (703) 308-6240. The examiner can normally be reached on Tuesday - Friday (7:00 AM to 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (703) 308-1261. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Jason M. Greene
Examiner
Art Unit 1724

jmg
November 22, 2003

DUANE SMITH
PRIMARY EXAMINER
11-22-03